

Notice of Allowability

Application No.

09/846,390

Examiner

Jason M Perilla

Applicant(s)

YUDA ET AL.

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed November 29, 2004.
2. ☒ The allowed claim(s) is/are 1-6 and 8-19 renumbered as claims 1-18.
3. ☒ The drawings filed on 02 May 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 20050405.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with William Pieprz (33630) on March 30, 2005.

The application has been amended as follows:

Regarding claim 1, in line 5, "a cyclic" is replaced by --a first cyclic--, in lines 8-9, "a cyclic" is replaced by --a second cyclic--, in lines 12-13, "estimator that estimates the directions" is replaced by --estimator that estimates directions--, and, in line 14, "the correlation" is replaced by --the cyclic correlation--.

Regarding claim 2, in line 3, "calculates a cyclic" is replaced by --calculates the first cyclic--, in lines 3-4, "of a spread spectrum modulated signal" is stricken, and, in line 4, "the chip rate" is replaced by --a chip rate--.

Regarding claim 3, in line 2, "calculates a cyclic" is replaced by --calculates the second cyclic--.

Regarding claim 4, in line 3, "calculates a cyclic" is replaced by --calculates the first cyclic--.

Regarding claim 5, in line 3, "said eigenvalues" is replaced by –said plurality of eigenvalues--, and, in line 4, "of the eigenvalues" is replaced by –of the plurality of eigenvalues--.

Regarding claim 6, in line 3, "from the reception signal" is replaced by –from a plurality of second modulated signals of the reception signal—and "calculates a cyclic" is replaced by –calculates the second cyclic--, and, in lines 3-4, "of a plurality" is replaced by –of the plurality--.

Regarding claim 8, in line 6, "a cyclic" is replaced by –a first cyclic--, in lines 9-10, "a cyclic" is replaced by –a second cyclic--, in line 11, "the modulation" is replaced by –a modulation--, in lines 13-14, "estimator that estimates the directions" is replaced by –estimator that estimates directions--, and, in line 15, "the correlation" is replaced by –the cyclic correlation--.

Regarding claim 9, in line 3, "calculating a cyclic" is replaced by –performing a first calculation calculating a first cyclic--, in line 5, "calculating a cyclic" is replaced by –performing a second calculation calculating a second cyclic--, in line 6, "the modulation" is replaced by –a modulation--, in line 8, "estimating the directions" is replaced by –estimating directions--, and, in lines 9-10, "calculated correlation" is replaced by –calculated cyclic correlation--.

Regarding claim 10, in line 3, "calculates a cyclic" is replaced by –calculates the first cyclic--, in lines 3-4, "of a spread spectrum modulated signal" is stricken, and, in line 4, "the chip rate" is replaced by –a chip rate--.

Art Unit: 2634

Regarding claim 11, in line 2, "calculates a cyclic" is replaced by –calculates the second cyclic--.

Regarding claim 12, in line 3, "calculates a cyclic" is replaced by –calculates the first cyclic--.

Regarding claim 13, in line 3, "said eigenvalues" is replaced by –said plurality of eigenvalues-- and "of the eigenvalues" is replaced by –of the plurality of eigenvalues--.

Regarding claim 14, in lines 2-3, "from the reception signal" is replaced by –from a plurality of second modulated signals of the reception signal—, in line 3, "calculates a cyclic" is replaced by –calculates the second cyclic-- and "of a plurality" is replaced by –of the plurality--.

Regarding claim 15, in line 3, "calculates a cyclic" is replaced by –calculates the first cyclic--, in lines 3-4, "of a spread spectrum modulated signal" is stricken, and, in line 4, "the chip rate" is replaced by –a chip rate--.

Regarding claim 16, in line 2, "calculates a cyclic" is replaced by –calculates the second cyclic--.

Regarding claim 17, in lines 3-4, "calculates a cyclic" is replaced by –calculates the first cyclic--.

Regarding claim 18, in lines 2-3, "the eigenvalues" is replaced by –the plurality of eigenvalues—and, in line 3, "of the eigenvalues" is replaced by –of the plurality of eigenvalues--.

Regarding claim 19, in lines 2-3, "from the reception signal" is replaced by –from a plurality of second modulated signals of the reception signal—, in line 3, "calculates a

Art Unit: 2634

cyclic" is replaced by --calculates the second cyclic-- and "of a plurality" is replaced by -- of the plurality--.

Claims 1-6 and 8-19 are renumbered as claims 1-18 and the claim dependency is renumbered accordingly.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art is cited to further show the state of the art with respect to direction of arrival methods.

U.S. Pat. No. 6430239 to Ferreol.

U.S. Pat. No. 6470043 to Lo et al.

U.S. Pat. No. 6349218 to Nakagawa et al.


U.S. Pat. No. 6647276 to Kuwahara et al.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2634

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jason M. Perilla
April 5, 2005

jmp



CHIEH M. FAN
PRIMARY EXAMINER